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ABSTRACT

This study describes the results of an analysis of the 293 papers published in the Association for Educational Communications and Technology (AECT) annual proceedings for the years 1996 through 2000. The primary purposes of this study are to identify the major topics or themes that were investigated in papers published in the proceedings over a 5-year period, and to identify the major research methodologies employed in the research studies of these proceedings. Other secondary purposes are to identify types of papers, subject or target audience addressed, contributing authors, authors' institutional affiliations, and the extent to which international contributions were present. This study used a content analysis methodology. Findings are presented and discussed according to the research questions related to seven characteristics: type of paper, topic, methodology, target audience, contributing author(s), contributing institution(s) and international contributions. Major findings were as follows: research study was the dominant type of paper; computer-mediated communication was the most popular research topic; experimental and qualitative methodologies were the most common research methods used; and college students were the audience most targeted. The Content Analysis Recording Form is appended. (Contains 12 references.) (AEF)

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An Analysis of Papers Published in the AECT Annual Proceedings from 1996 through 2000

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Paper Presented at the 23rd National Convention of the Association for Educational Communications and Technology

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An Analysis of Papers Published in the AECT* Annual Proceedings From 1996 Through 2000

Abstract:

This study describers the results of analyzing 293 papers published in the AECT annual proceedings from 1996 through 2000. A content analysis approach was used for the purpose of identifying implications related to the following characteristics: type of paper, topic, methodology, target audience as well as identifying contributing authors, institutions, and international contributions.

Introduction:

The value of research, studies, and papers, whether published in professional journals or presented in conferences, can be maximized when reviewed, analyzed, and reflected upon for the purpose of shedding light on implications and trends within a field, with the ultimate goal of proposing directions and suggesting guidelines for advancing both the field and profession. A number of studies were conducted in the past that addressed different literature sources and used various research methodologies. Carr et al., (1986), Haplin and Haplin (1988), Thomspon (1988) (Cited in Fang 1995-96), Fang (1995-96) and Caffarella (1999) investigated different issues in doctoral dissertations over different periods of time. Ely (1988, 1989, 1991, and 1996) used a content analysis approach for analyzing papers and studies published in scholarly journals, ERIC documents, as well as papers presented at the AECT*conventions. Molenda et al., (1988), reviewed content analysis studies conducted by Ely and others to identify important issues and trends in the field. Anglin et al.,(1999) conducted a content analysis of instructional technology journals to identify trends and issues in the filed. The present study took a similar approach in an attempt to review and analyze papers and research studies published in the AECT annual proceedings from 1996 through 2000.

Purpose of the Study:

The primary purposes of the study are to identify the major topics or themes that have been investigated in the papers published in the AECT annual proceedings over a five year period (1996-2000), as well as the major research methodologies that were employed in the research studies of these proceedings. Other secondary purposes are to identify types of papers, subject or target audience addressed in research studies,

* AECT: Stands for the Association for Educational Communications and Technology.

contributing authors, and author's institutional affiliations, and the extent to which international contributions were present in the proceedings.

Research Questions:

The study attempted to answer the following research questions:

- What are the major types of papers published in the AECT 1996-2000 proceedings?
- What are the major topics (or themes) addressed by these papers?
- What are the major research methodologies used in these papers?
- Who are the major audiences targeted by these papers?
- Which authors and co-authors are the most contributors to these proceedings?
- Which institutions are the most contributors to these proceedings?
- To what extent do international contributions present in these proceedings?

Significance of the Study:

The proposed study builds upon earlier content analysis studies conducted by Caffarella (1999), Anglin et al., (1999) and Fang (1995-96). Further, to the knowledge of the researcher, no other study investigated papers published in the AECT annual proceedings over a five year period. Ely's Study (1996) which included journals, dissertations, ERIC documents, and conferences was limited to the year of 1995 only. In addition, previous content analysis studies did not address some of the characteristics investigated in the present study (e.g. type of paper, target audience of the papers, and international participation). Thus, this study should yield valuable information related to the field research agenda including future themes of the AECT conventions as well as research projects by individuals and organizations.

Methodology:

The study used a content analysis methodology, an approach used in a number of studies (Ely 1996, Anglin et al., 1999 and Caffarella 1999) to trace themes and issues in the field. Caffarella (1999, p. 483) considers this approach an appropriate one to classify words of text into content categories. Anglin et al., (1999,p.2) indicate that " an analysis of the literature of a field is one approach used to identify and describe significant issues, current trends, and the individuals who do inquiry".

A preliminary analysis of the papers in the proceedings as well as review of previous studies, enabled the researcher to identify and develop the following seven characteristics as the units of analysis upon which each

paper was evaluated: type of paper, topic, research methodology, target audience, contributing authors, contributing institutions, and International contribution. Major categories of these characteristics are as follows:

- **Type of paper**: Theoretical papers, research studies, and literature reviews.
- **Topic:** computer mediated communications (CMC) distance education, ITV/video, instructional design (ID), constructivism and change.
- **Research methodology:** Experimental studies, survey studies qualitative studies, and content analysis.
- **Target audience:** K-12 students, undergraduates, graduates, pre-service and in-service teachers.
- Contributing authors;
- Contributing institutions; and
- International contributions.

In addition, since 'topic' is one of the most important characteristic to be investigated in the study, and since CMC represents a hot topic and an important area of interest in the field, it was divided into sub-topics of Computer Mediated Multimedia (CMM), Screen and Interface Design (SID), Games and Simulations (G/S), Electronic mail and Web Based Instructions(WBI).

Procedures:

A total of 293 papers published in the AECT annual proceedings from 1996 through 2000 were analyzed. The analysis was based on reading certain parts of each paper to obtain needed data. Cover page of paper provided data related to author(s) name(s), institutions, and nationality. Abstract in each paper was read to obtain data related to type of paper, topic, methodology and target audience. In many cases, other parts of paper such as methodology and procedure, purpose(s) setting and participants were read as well. A seven-item content analysis recording form was used to categorize the characteristics found in the papers (see appendix A). For reasons of validity, the content analysis related to the first four characteristics have been conducted twice by the researcher with an interval of three months between the two analysis. The re-analysis was applied to the 1996 through 1999 proceedings only because the 2000 proceedings was obtained only one month prior to the final report of the study. Only few differences have been noticed in regard to categorizing papers according to topics addressed in them. Data analysis were carried

out using simple statistics, namely, frequencies and percentage. Tables and figures were used to present the finding.

Literature Review:

A number of content analysis studies in the field of instructional technology have been carried out during the two past decades. Perhaps the most well known of such studies are those that have been conducted by Ely et al., from 1988 through 1995. Ely et al., conducted a series of content analysis studies using multiple literature sources for the purpose of identifying trends in the field for a given year. Literature sources in these studies included journals, dissertations, conferences, and ERIC documents. These studies covered the years 1988, 1989, 1991, and 1995. Based on this work, a number of emerging trends in the field of instructional technology have been identified; briefly these were pervasiveness of computers in schools and higher education institutions, fast growth of networking applications in education, universal access to television sources in schools, increased advocacy for the use of educational technology among policy makers, increased availability of educational technology in home and community settings, increased growth of new delivery systems for educational technology applications, changing in teacher's role in the teaching learning process in response to new technologies introduced in the classroom and perception of educational technology as a major vehicle in the improvement toward education reform (Ely et al., 1996, PP. 13-39).

Fang (1995-96) used a content analysis methodology in analyzing Computer Assisted Instruction (CAI) dissertations over a six year period (1988-1993), for the purpose of highlighting trends related to types of instructional modes, beneficiary audience, and thrusts used in CAI dissertations. He found that tutorial was the dominant instructional mode, analysis and design were the major thrusts, and college students were the most targeted audience (P. 79). Anglin et al., (1999) conducted a content analysis study to identify the major topics and concepts that have been investigated in four instructional design and technology journals over a five year period. Secondary issues addressed by Anglin et al., were the identification of authors contributing theoretical papers, literature reviews, and primary research studies in the four journals. As a result, major topics investigated in these journals were ID, CAI, computer uses in education, research, educational technology, instructional systems, hyper media, computer attitudes, constructivism and cooperative learning (P.7). Caffarella (1999) used a content analysis approach to identify major

themes and trends in doctoral dissertation research in educational technology from 1977 through 1998. The major findings were that computer related issues were the most popular topics addressed in those dissertations, that the theme instructional design was constant through out the 22 year period and an increase in the number of qualitative studies (P. 484-488).

Molenda, Russell, and Smaldino (1999) investigated trends related to media and technology that are affecting the fields of formal education and corporate training based on an analysis of trends reported by Ely (1996), Bassi et al., (1996) Industry Report, and data provided by the U.S. Department of Education (P. 2). Ten trends in 1997 have been identified, among which were incorporation of computer and telecommunications based media and interactive technologies in education, support for the concept of educational technology, updating paradigms of instructional design, growing interest in constructivist learning and restructuring of organizational processes. (P. 3-8).

Yan Ma (2000) conducted a study using survey, content analysis and citation analysis of dissertations conducted at the educational technology program at the University of Wisconson/ Madison from 1977to 1999, for the purpose of identifying methodologies, topics, and theories used in these dissertations. Various methodologies (experimental, case study, interview, survey, etc), theories (behavioral, cognitive constructivism, situated learning, etc), and topics (audiovisual centers, educational computers, interactive video, etc) were identified (P. 296,297).

Findings and Discussion:

A total of 293 papers were analyzed in the study. Figure 1 shows the number of papers published in the AECT proceedings for each year. The seven characteristics which comprised the units of analysis in the study included type of paper, topic, research methodology, target audience, contributing authors, contributing institutions, and international contributions. In the following section, the findings of content analysis of these papers will be presented and discussed according to the order of these characteristics and related research questions.

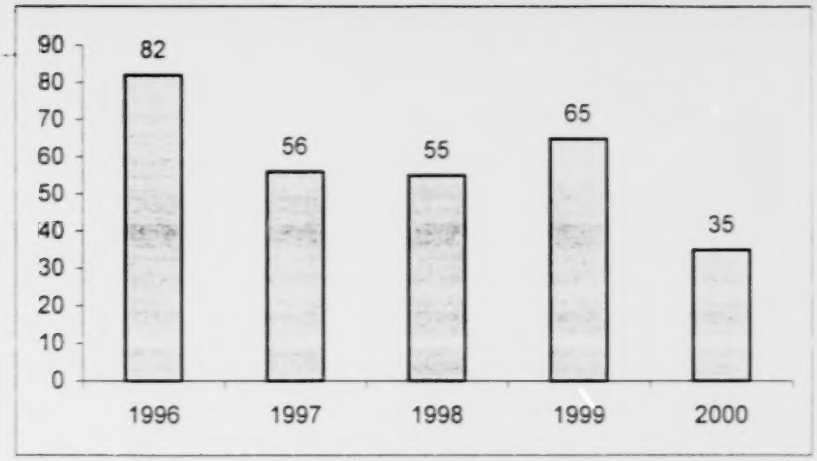

Figure 1. Number of papers published in the AECT proceedings from 1996-2000

Type of Paper:

What are the major types of papers published in the AECT 1996-2000 proceedings?

Types of papers in this category included theoretical papers, research studies, and literature review. Other types of papers were mostly project or case reports. As figure 2 clearly shows, research study was the dominant type of paper published during the five years of the proceedings. A total of 189 research studies amounted to 64.5 percent of all the papers (n=293) published in the proceedings from 1996 through 2000. 27.3 percent of these papers were theoretical ones and 5.4 percent were project or case reports. Literature review papers were the least type of papers.

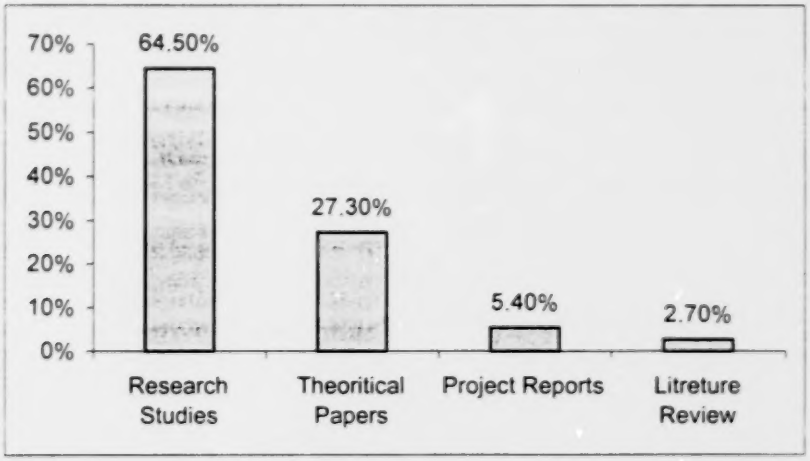

Figure 2. Percentage of types of papers published in the AECT annual proceedings from 1996 through 2000.

Topic: **What are the major topics addressed in the AECT 1996-2000 proceedings?**

Topics was divided into six categories. These are CMC, ID, constructivism, distance education, ITV/ video and change. As can be seen from figure 3, the percentage of papers dealing with CMC far exceeded other types of topics over five year period. A total of 134 papers or 45.7% (n=293) dealt with CMC related topics. This is expected as newest information technologies and applications find increased usage in educational settings. It is also consistent with findings reported by Cafferalla (1999, P.484) who found that research on and about computers was the most popular topic in doctoral dissertations conducted in U.S. universities from 1977 through 1998, a trend, according to him, that is consistent with the advent of microcomputers. Likewise, Ely et al., (1991) (Cited in Anglin 1995, P. 42-47) identified trends related to widespread utilization of distance learning technology and pervasive of computers in schools in addition to networking dominance in telecommunications. Similar findings were reported by Molenda, Russell, and Smaldino (1998, Vol. 23, P. 4,5) about increased incorporation of telecommunications based-media and advanced interactive technologies into the instructional mainstream. Papers dealing with ID ranked second amounting to 19.1 percent, followed by constructivism (11.9%), distance education (7.5%), ITV/ video (3.0%), and change (1.3.%). It appears from these figures that, although important to the issues of implementation and institutionalization, change was the least topic addressed.

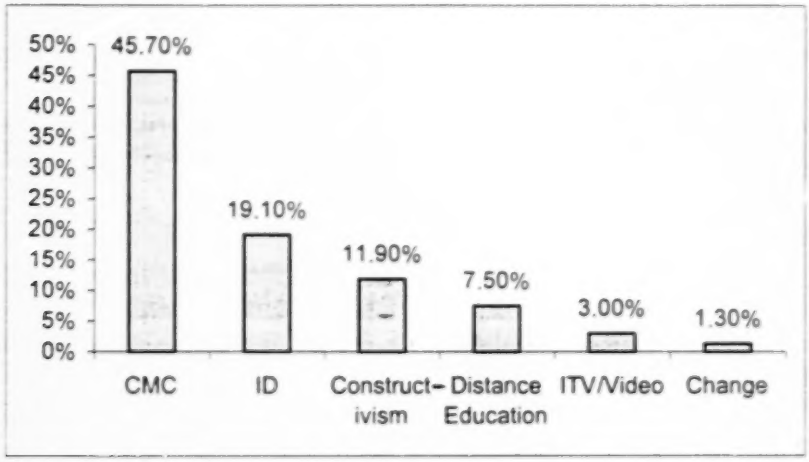

Figure 3. Percentage of papers dealing with major topics for five year period (1996-2000)

In the area of constructivism, various issues we addressed in the papers including cooperative learning, problem-based learning, generative learning, scaffolding, anchored instruction, open ended and student centered learning environment and dynamic learning community.

CMC was further sub-divided into sub-topics for the purpose of providing more details about CMC related issues addressed in the papers. These sub-topics included CMM, WBI, SID, E-mail and G/S. As a figure 4 shows, 39.5 percent and 34.3 percent of the 134 papers dealing with CMC addressed CMM and WBI respectively. Further, these two sub- topics alone amounted to approximately 33.6 percent of all the papers (n=293) published in the AECT annual proceedings from 1996 through 2000 (see figure 5).

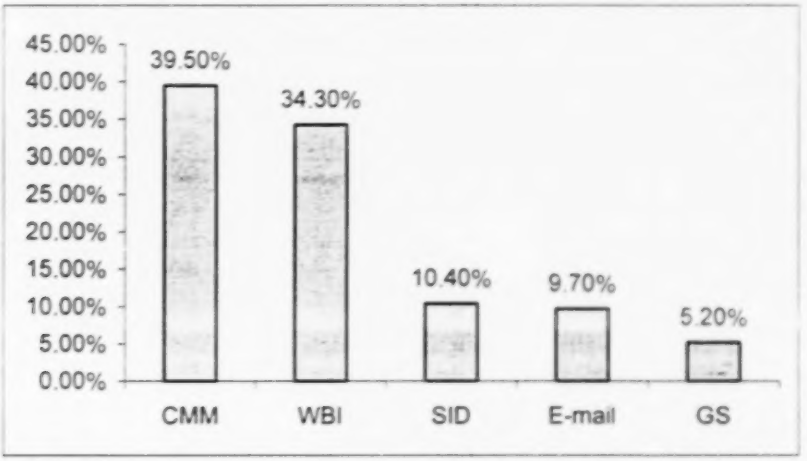

Figure 4: Percentage of papers dealing with CMC sub-topics (n=134)

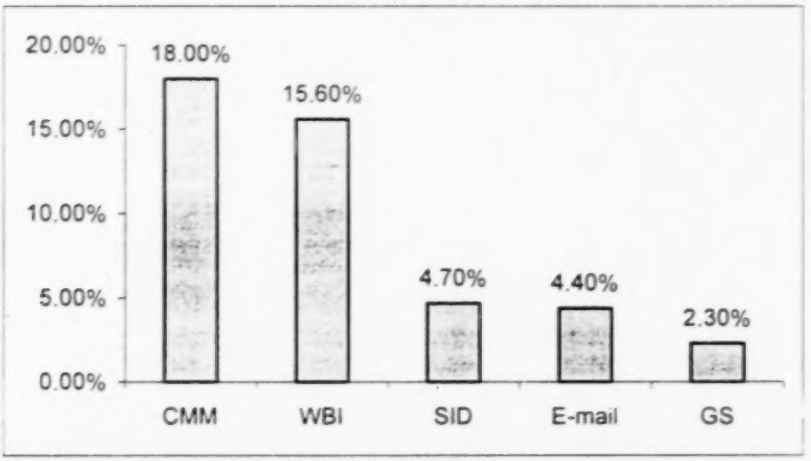

Figure 5: percentage of papers dealing with CMC sub-topics related to the total number of papers (293) published in the AECT annual proceedings from 1996 to 2000.

Research Methodology:

What are the major research methodologies used in the papers published in the AECT 1996 to 2000 proceeding?

Four types of methodologies chosen for this category were experimental, qualitative, survey, and content analysis research methodologies. Analysis of results indicates that experimental research methodology amounted to approximately 25 percent of all the papers (n=293) published in the AECT annual proceedings from 1996 to 2000 (see figure 6). Almost equally employed was qualitative method which amounted to 23.8 percent. Although slightly increased over the five year period, qualitative methodology were used in 70 papers indicating an increased interest in this type of methodologies, thus, supporting previous findings reported by Cafferalla (1999, P.488) who noted: " a sheft in research methodology can be seen in a reduction in the number of experimental studies and an increase in the number of qualitative studies". Cafferalla explained this sheft in light of Clark (1983) critique of comparative studies. Another explanation for the current study findings may be due to increased interest in constructivism which calls for qualitative evaluation of student learning.

The most prevailing techniques used in qualitative methods in the papers were observations, interviews, documents analysis, diary, frequency count and debriefing. Finally, content analysis was the least methodology employed in the papers.

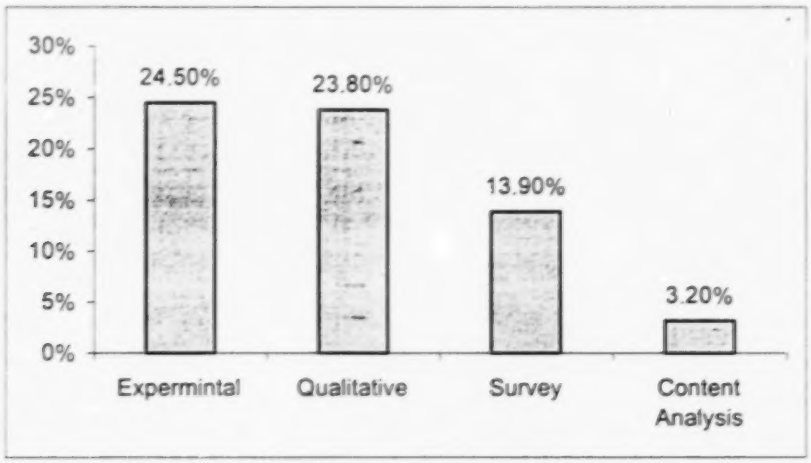

Figure 6: percentage of research methodologies employed in the papers published in the AECT annual proceedings over five year (1996 – 2000)

Target Audience:

Who are the major audiences targeted in the papers published in the AECT 1996-2000 proceedings?

Categories of target audience included K-12 students, undergraduates (non-education majors), graduates, pre-service and in-service teachers. Undergraduates were the most prevailing audience targeted in the papers amounting to approximately 23 percent (n=293). K-12 students were targeted in 11.6 percent; graduates and pre-service in 9.2 percent each, and in-service teachers in 7.5 percent only (see figure 7). When some of these numbers are combined, a different picture emerges. Figure 7 shows that college students (undergraduates, pre-service) and graduates amounted to more than 41 percent of the target audience designated in the papers, while K-12 students and in-service teachers together did not exceed 19.1 percent. One possible explanation might be that it is more convenient for faculty in terms of time and logistics to target audience at the colleges or academic departments. Fang (1995-96, P79) also found that college students were the most targeted audience in CAI doctoral dissertations from 1983 through 1993. Finally, in a considerable number of theoretical and project report papers which did not specify target audience, one can infer that instructional designers are the most beneficiaries, especially in papers dealing with ID and constructivism related issues.

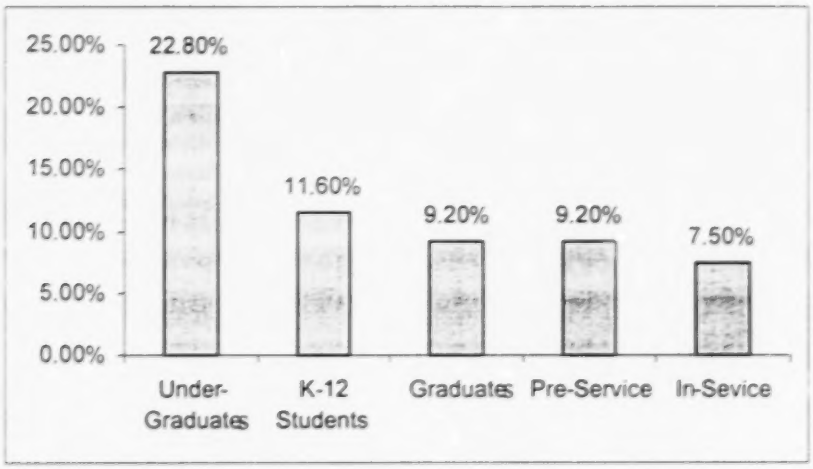

Figure 7: Percentage of audience targeted by the research studies published in the AECT annual proceedings from 1996 through 2000.

Contributing Authors:

Which authors and co-authors are the most contributors to the 1996-2000 proceedings?

Analysis of data showed that the highest number of papers contributed by a single author or co-author was ten papers. Table 1 presents a list of authors and co-authors who have contributed 3 to 10 published papers during a five year period.

Author (or co-author)	Total number of papers
Knupfer, Nancy, Nelson	10
Heidi, Schnackenberg L.	8
Land, Susan M.	8
Cates, Mitchel ward	6
Cennamo, Katherines	6
Klein, James D.	6
Savenye, Wilhelmina C.	5
Moullem, Mahnaz	5
Sullivan, Haward J.	5
Morrison, Gary K.	4
Johnes, Marshall G.	4
Sherry, Annette C.	4
Hannafin, Micheal J.	4
Wilson, Brent G.	3
Caffarella, Edward P.	3
Seels, Brabara B.	3
Januszewski, Alan	3
Persichitte, Kay A.	3
Bateman, William E.	3
Schwen, Thomas	3
Ryeder, Martin	3
Boling, Elizabeth	3
Small, Ruth V.	3
Jost, Karen Lee	3
Hill, Janette R.	3
Martin, Barbara	3
Harmon, Stephen W.	3
Thrap, Donald D.	3
Koeting, Randall J.	3
Moore, Julie A.	3

Table1. Authors and co-authors contributing 3 to 10 papers.

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Contributing Institutions:

Which institutions are the most contributors to the 1996-2000 proceedings?

Three universities, namely, Arizona state University, Indiana University, and the Pennsylvania state University have far exceeded other universities in their contributions of published papers in the AECT proceeding from 1996 to 2000 period. Together, these three universities, have contributed 82 published papers amounting to 27.9 percent of all the papers (n=293) published in the 1996-2000 proceedings. Table 2 presents a list of institutions which contributed 4 to 29 papers.

In addition, a total of 13 papers amounting to 4.4 percent (n=293) were contributed by 11 corporations among which was Storage Technology Corporation which has contributed three papers.

Institution	Total number of papers
Arizona State University	29
Indiana University	28
The Pennsylvania State University	25
Kansa State University	12
Northern Illinois University	10
Lehigh University	9
University of Georgia	8
Syracuse University	8
University of Northern Colorado	8
Virginia Tech	8
Wayne State University	7
Georgia State University	7
University of North Carolina (Wilmington)	7
University of Pittsburg	6
University of Memphis	6
Purdue University	5
University of Colorado (Denver)	5
University of Oklahoma	5
Texas A & M	4
University of Wisconsin (Madison)	4

Table 2. List of institutions contributing 4 to 29 papers.

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International Contributions:

To what extent do international contributions present in the AECT proceedings?

Results shows that 16 published papers amounting to 5.4 percent (2=293) were contributed by international authors and institutions. The university of Guam and the University of Twente (The Netherlands) both contributed three papers over a five year period and the Tamkang University (Taiwan)contributed two papers. Yu Mei Wang of the University of Guam has authored and co-authored three papers and Hsin-Yih Shya has authored and co-authored two papers. Although more convenient internet telecommunications are now available, international contributions did not increase, in fact 12 of the 16 paper mentioned above were in the 1996 and 1997 proceedings.

Summary:

A contact analysis approach was used to analyze 293 papers published in the AECT annual proceedings from 1996 through 2000. seven characteristics (type of paper, topic, methodology, target audience, contributing author(s), contributing institution(s) and international contributions were chosen as the units of analysis upon which each paper was evaluated. Major findings were as follows: research study was the dominant type of paper, CMC was the most popular topic researched in the papers, experimental and qualitative methodologies were the most research methods used in the papers and college students were the most audience targeted in the papers.

Recommendations :

Findings of the Study indicate a need for:

- Research works in change related issues. Such need can be promoted through planned themes for future conferences. Educators are well aware that past failures of technological innovations in schools were more related to change variables, particularly implementation and management than technology itself.
- Literature reviews studies that consolidate and synthesize findings in specific areas. Such need can be justified in light of the proliferation of sources of research through multiple information channels which might make it difficult for instructional practitioners to utilize its findings.
- Conducting more research studies targeting K-12 students and in-service teachers in the real world of school settings.

- Promoting more international participation in the AECT future professional conferences. The international counseling at the Association can play a major role through its coordinators to publicize its professional activities. This job is now much more easy with telecommunications advancement.

Appendix A

Content Analysis Recording Form

Proceedings year:

( ) 1996 ( )1997 ( )1998 ( )1999 ( )2000

Number of papers published in the Proceeding year:_____

Title of paper_____ Page No: _____

Unit of Analysis (Characteristics)

1. Type of paper:

( )Theoretical paper ( )Research study

( ) Literature review ( )Other

2. A. Major Topics:

( ) CMC ( )ID ( ) Constructivism

( ) Distance Ed. ( )ITV/Video ( ) Change

( ) Other

2. B. Sub-topics (CMC):

( )CMM ( ) SID ( )G/S

( ) E-mail ( ) WBI ( ) Other

3. Research Methodology:

( ) Experimental ( ) Survey

( ) Qualitative ( ) Content Analysis

( ) Other

4. Target Audience:

( ) K-12 students ( ) In-service teachers

( ) Undergraduates ( ) Graduates

( ) Pre-service teachers ( ) Other

5. Contributing Author(s) / Co-author(s):

_____

_____

6. Contributing Institutions:

_____

_____

7. International Contribution:

( ) Yes ( ) No

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